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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,270	07/25/2003	Ulfar Erlingsson	2525.0750001	7588

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EXAMINER	
HOMAYOUNMEHR, FARID	
ART UNIT	PAPER NUMBER
2439	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/627,270	ERLINGSSON ET AL.	
	Examiner	Art Unit	
	Farid Homayounmehr	2439	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to communications: application, filed 7/25/2003; amendment filed 9/23/2008.

2. Claims 1-25 are pending in the case.

Response to Arguments

3. With respect to claim 1, applicant argues that Moskowitz does not teach generation of a plurality of watermarks. However, first, the cited paragraphs 30 and 31 shows that Moskowitz generates watermarks comprising a QoS indicator, which is determined based on QoS associated with the stream. As QoS may be varied, Moskowitz shows generation of different, and therefore plurality of watermarks. Second, the rejection also relies on Shur for showing generation of plurality of watermarks, each associated with respective portion of the stream.

Applicant further argues that Moskowitz teaches away from generation of plurality of watermarks because in paragraph [0034] it states that it is preferred to have the same watermark for the stream. However, first, the cited portion indicates a preferred mode of operation, not the only possible one. If Moskowitz had to have the same watermark for each packet, it would have stated that the packets must or should have the same

watermark. Therefore the cited part of the paragraph shows that one embodiment is possible, but the other one is preferred. Therefore, not only Moskowitz does not teach away from having different watermarks in different packets, it actually hints or suggests the possibility of such embodiment. Since that embodiment was not explicit in teaching of Moskowitz, Examiner has cited Shur.

Applicant further argues that Shur does not teach generating plurality of watermarks. However, the rejection of claim 1 clearly shows how Shur teaches generation of plurality of watermarks. Applicant also argues that Shur does not teach the index associated with each watermark, The only reason stated by the applicant is that Shur does not teach plurality of watermarks. However, as stated before, Shur does teach generation of plurality of watermarks, and the rejection shows how the combination teaches generation of indices associated with watermarks.

It is noteworthy that Moskowitz paragraph [0032] shows generation of a watermark ID, WID, that is generated based on different portion of the transmitted stream, and clearly the content of each packet. The WID is indexed based on the hashed portions of each packet as shown in paragraph [0034]- [0042]. The watermark includes a portion associated with this WID (see paragraphs 30-31). Moskowitz does not explicitly show each indexed portion put in each packet it is associated with. Shur is cited to complete the mentioned part, as it shows different portions of the stream can have different watermarks, associated with each portion.

Applicant further argues that Shur's method is not concerned authentication, and rather is directed to piracy protection. However, first, piracy protection is performed via authentication, Second, Moskowitz is directed to a method of authentication of packets.

Applicant further refers to Shur Fig. 1(a) and 1(b) to argue that Shur is directed to watermark generation of an information signal and not packets. Applicant states that Shur never refers or suggests watermarking a stream of packets. However, nothing in Figs. 1(a) or 1(b) suggest that Shur's method cannot be applied to packetized streams. In fact, Shur col. 3 lines 61 to 66 suggests that information may be watermarked at the time of distribution via the Internet. In addition, Moskowitz is clearly directed to watermarking packetized streams. Applicant also cites Shur col. 7 line 56 to col. 8 line 8 and states that in some conditions, no watermark bits can be inserted in a particular time slot. First, the cited portion does not state that no watermarks can be inserted in any time slot. Second, even if such statement were true, it is not clear how it traverses the rejection.

Applicant's argument relative to other independent claims is based on the same argument made for claim 1. Applicant's argument relative to independent claims is related to dependency of the claims on independent claims. Accordingly, applicant's argument relative to allowability of the pending claims is found non-persuasive.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 22-25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims include a watermark comprising a **different** respective index number and a **different** respective portion of the stream of watermarks. Applicant fails to identify a portion of Specification is support of the new claims.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 to 7, 10 to 17, 20 to 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskowitz (US Patent Application Publication No. 2003/0200439, filed 4/14/2002), in view of Shur (US Patent No. 6,330,672, filed June 30, 1998).

7.1. As per claim 1, Moskowitz is directed to a method for providing secure transmissions across a network comprising a client device and a server (parag. 11, describing a transmission system that checks to see if transmitted packets are authentic, and therefore describing a secured transmission. Note that Moskowitz teaches a two way transmission system (see the section titled response to arguments above), and therefore the transmission is both from client to server and vice versa), the method comprising: at the transmitting device, generating a stream of watermark bits (parag 30); generating a plurality of watermarks, each of the plurality of watermarks comprising an index number and a portion of the stream of watermark bits (parag 31, indicating an identifier (index) in each water mark, associating it with the watermark key); inserting the plurality of watermarks into each header of a plurality of outgoing packets (parag 30 to 43. Also see claim 1); receiving, at the server (the receiving device when IP packet transmission is from client to server), the plurality of outgoing packets (parag 44); and determining if a received packet is valid based on the watermark in the header of the received packet (parag 45-47. See also claim 2).

Moskowitz, however, does not explicitly teach the plurality of watermarks with respective index number to be inserted in the respective header of packets. Meaning,

Moskowitz clearly teaches a watermark, with its index to be inserted in all headers of packets, but does not explicitly teach each header receiving a respective different watermark.

Shur teaches generation of a string of watermark bits (see Fig. 2A, and associated text), by item 130, where the string of watermark bits is injected to the data stream at different locations, based on the index associated with the hidden data (watermark stream), as indicated in col. 6 lines 38-52. The index is generated by item 120, which is driven by the transform coefficients associated with different parts of the data stream (see col. 7 line 55 to col. 8 line 10 and col. 8 line 49 to col. 9 line 20). Therefore, Shur teaches putting different portions of the watermark string in different parts of the data, and defining an index, which identifies which part of the data stream is affected by the addition or injection of the watermark stream.

Moskowitz and Shur are analogous art, as they are both directed to watermarking techniques to identify piracy and data authentication. At the time of invention, it would have been obvious to the one skilled in art to combine the teachings of embedding a string of digital watermark bits into different packets of Moskowitz, and indexing the different portions such that the watermark associated with each packet would be detected by the decoder. Note that Shur teaches breaking data string into different time segments (packets), and associating a part of the watermark string with each segment (see Shur col. 7 line 62 to col. 9 line 9).

The motivation to do so would be to add watermarks to streaming data, such as audio or video signals, transferred in the packet switched networks, while not affecting the perception of the audio or video by the consumer, as stated in Shur col. 3 lines 10 to 38.

7.2. As per claim 2, Moskowitz in view of Shur is directed to the method of claim 1, wherein generating the stream of watermark bits includes generating a stream of watermark bits from an authorization and synchronization packet previously exchanged between the client device and the server (Moskowitz paragraph 46 indicates that the WID is distributed from senders to the receivers prior to transmission of packets bearing the watermark, and according to paragraphs 31-32, the watermarks are generated based on the WID).

7.3. As per claim 3, Moskowitz in view of Shur is directed to the method of claim 1, further comprising activating a session by exchanging an authorization and synchronization packet between the client device and the server (Moskowitz paragraph 46 indicates that a secure session is created between senders and receivers to distribute the WID).

7.4. As per claim 4, Moskowitz in view of Shur is directed to the method of claim 1, further comprising: discarding the packet, if the watermark is not valid (Moskowitz parag. 45).

7.5. As per claim 5, Moskowitz in view of Shur is directed to the method of claim 1, wherein determining if a received packet is valid comprises: comparing the watermark of the received packet to a first and a second window, each of the windows comprising a set of expected watermarks; and accepting the watermark as valid if the received watermark matches one of the expected watermarks in the first or second windows (Moskowitz parag. 45 teaches comparing the watermarks to a table of WIDs to find the appropriate WID. Therefore it teaches comparing the watermarks to several windows containing a set of potential matching watermarks)

7.6. As per claim 6, Moskowitz in view of Shur is directed to the method of claim 5, wherein the set of expected watermarks are generated from an authorization and synchronization packet previously exchanged between the client device and the server (Moskowitz parag 46).

7.7. As per claim 7, Moskowitz in view of Shur is directed to the method of claim 5, comprising: discarding the packet, if the watermark does not match one in the first or second windows (Moskowitz parag 45).

7.8. As per claim 10, Moskowitz in view of Shur is directed to the method of claim 1, wherein the stream of watermark bits is generated by a stream cipher (Moskowitz paragraph 30-32).

7.9. As per claim 11, Moskowitz in view of Shur is directed to the method of claim 1, wherein inserting at least one of the plurality of watermarks includes determining whether a valid session exists and inserting the at least one of the plurality of watermarks only if the valid session exists (Moskowitz paragraph 46 indicates that the WID is sent in a secure session prior to sending the packets).

7.10. Limitations of claims 12-17 and 20-25 are substantially similar to claims 1-7 and 10-11 above.

8. Claims 8, 9, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moskowitz in view of Shur, and further in view of Examiner Official Notice.

8.1. As per claim 8, Moskowitz in view of Shur is directed to the method of claim 5, wherein comparing the watermark further comprises:
maintaining at the server a record of a pivotal index number representing the index number of the highest-numbered valid watermark received from the client device; comparing the watermark of the received packet to a first and a second window, each of the windows comprising a set of expected watermarks and wherein the first window

represents expected watermarks whose index numbers precede the pivotal index number and the second window represents expected watermarks whose index numbers immediately supersede the pivotal index number (Moskowitz teaches comparing the packet's watermark to the watermarks in a first and second window as described in response to claim 8 Moskowitz also teaches recording and using a pivotal index number of representing the index number of the highest-numbered valid watermark received from the transmitting device in paragraphs 32-42. Considering the first packet in the sequence of packets as representing the highest-numbered valid watermark received from the transmitting device, the other packets in the sequence will have their corresponding matching watermark sequentially in the WID. For example, the matching watermark corresponding to the second packet is found in the WID at the location superseding the first matching watermark corresponding to the first received packet (pivotal packet). Examiner takes Official Notice that considering the last packet as the pivotal packet, the matching watermarks corresponding to the other packets in the stream of packets will be found sequentially at the preceding locations relative to matching watermark corresponding to the last packet of the stream. Therefore, it would have been obvious to a person skilled in art to use the above mentioned teachings of Moskowitz, and implement an indexing method based on sequential ordering of matching watermarks and a pivotal packet as required by the claim limitation).

8.2. As per claim 9, Moskowitz in view of Shur is directed to the method of claim 8, comprising: increasing the pivotal index number if a match is found in the second

window and deleting the matching expected watermark from the second window (see response to claim 8, and note that when the router (Moskowitz paragraph 45) verifies the validity of a packet, it will sequentially move to the next packet and deletes the useless data (matching watermark for the packet already verified) as it is standard practice in computer systems to delete the useless data).

8.3. Limitations of claims 18 and 19 are substantially similar to claims 8 and 9 above.

Conclusion

7. **THIS ACTION IS MADE FINAL**. See MPEP § 7.39. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farid Homayounmehr whose telephone number is (571) 272-3739. The examiner can be normally reached on 9 hrs Mon-Fri, off Monday biweekly.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kambiz Zand can be reached on (571) 272-3811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Farid Homayounmehr

12/5/2008

/Kambiz Zand/

Supervisory Patent Examiner, Art Unit 2434